

ALTS2400 CSA Z32 Test System Description

The ALTS2400 is an automated test unit specializing in performing Electrical Polarity, Voltage Drop, and Ground Return Path Voltage Rise Tests for Grounded Systems required to meet the CSA Z32 standard (Electrical Safety and Essential Electrical Systems in Health Care Facilities) and referenced in section 24 of CSA C22.1-15 (Canadian Electrical Code, Part I Safety Standard for Electrical Installations).

A laptop with Windows 7 (or higher) running the included ALTS2400 Control Software connected via USB is all that is required to perform efficient and accurate CSA Z32 testing.

Each test is completed in less than 20 seconds with much higher accuracy and more information gathered than using conventional single measurement methods.

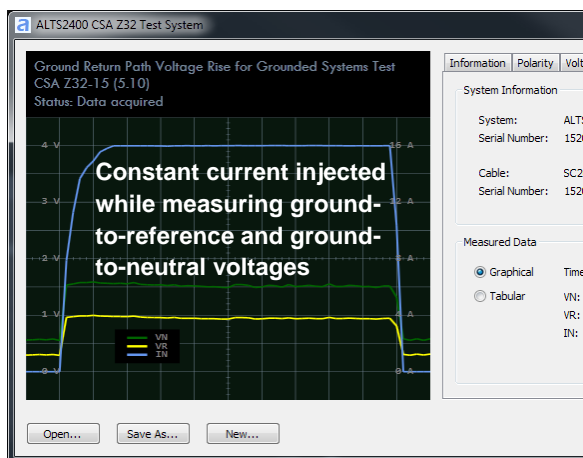


Ground Return-Path Voltage-Rise Test

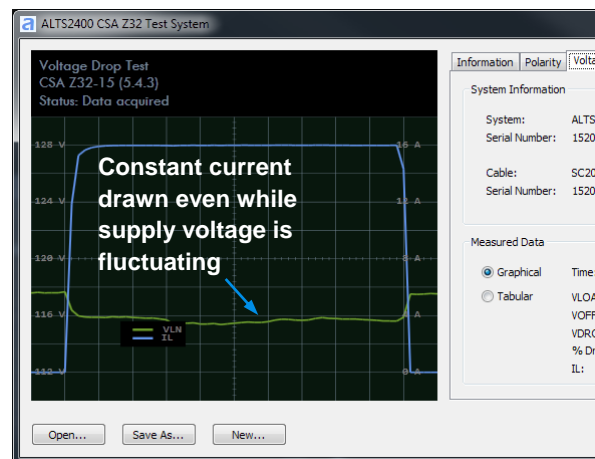
The ground return-path voltage-rise test results show whether V_R exceeds 3.0 V when a fault current is injected into the branch circuit. Ground voltage (with respect to a known reference) is displayed along with the energizing circuit's ground-to-neutral voltage all while simulating a constant fault current.

A summary of results are produced after the completion of each test in the format and order required for easily determining acceptance according to the CSA Z32 standard.

Collected data can be saved to file for reference and recalled at a later date for analyzing circuit performance over time.



Voltage Drop Test



The ALTS2400 ensures that 80% of full-load current is drawn for the required duration during the voltage drop test. Readings are taken before and after the test is performed for loaded and unloaded circuit comparison. Results are displayed in graphical or tabular format providing easy pass/fail determination based on the limits of acceptable performance.

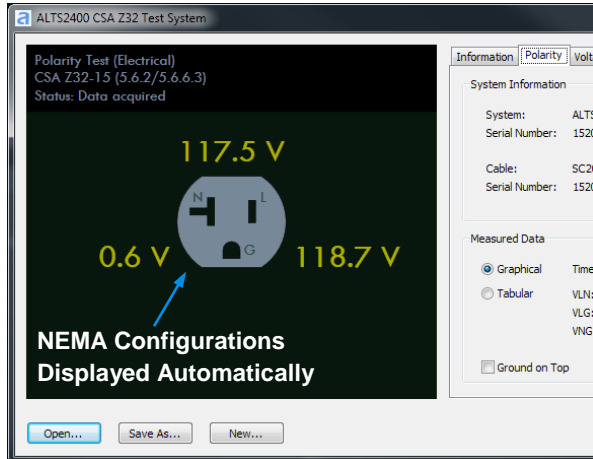
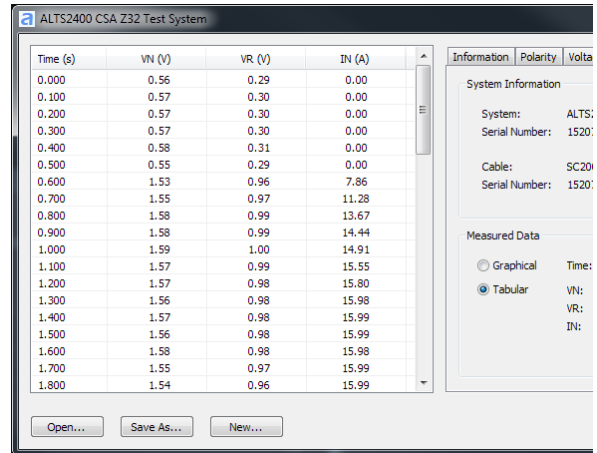
Each test data file is encoded with a date and time stamp along with calibration validation information and serial numbers of both the test unit and cables used during testing.

Voltage Polarity and Level Test

Tabular Data

The voltage polarity and level test verifies that the receptacle is wired correctly from an electrical perspective (a visual verification for ground and neutral connection is always required in grounded systems).

Voltage readings are compared against CSA Z32 and IEC 60038 tolerances to ensure that unloaded levels are adequate at point of use.

Time (s)	VN (V)	VR (V)	IN (A)
0.000	0.56	0.29	0.00
0.100	0.57	0.30	0.00
0.200	0.57	0.30	0.00
0.300	0.57	0.30	0.00
0.400	0.58	0.31	0.00
0.500	0.55	0.29	0.00
0.600	1.53	0.96	7.86
0.700	1.55	0.97	11.28
0.800	1.58	0.99	13.67
0.900	1.58	0.99	14.44
1.000	1.59	1.00	14.91
1.100	1.57	0.99	15.55
1.200	1.57	0.98	15.80
1.300	1.56	0.98	15.98
1.400	1.57	0.98	15.99
1.500	1.56	0.98	15.99
1.600	1.58	0.98	15.98
1.700	1.55	0.97	15.99
1.800	1.54	0.96	15.99

All data is available in graphical and tabular formats providing highly detailed information at the click of a button. All collected information is retained within the file and can be recalled at anytime after tests are performed.

Test Cable Interface

The test cable includes remote sense lines for accurate measurement directly at the receptacle under test. Integrated electronics provide information for each test including voltage and current capacity.

These advanced features allow users to quickly change out cables for both 15 A and 20 A receptacles (SC2000 required for 20 A testing). The ALTS2400 automatically selects the appropriate test parameters and duration based on the connected cable.

The ALTS2400 ships with one SC1500 Test Cable (for 120 V, 15 A circuits). If 120 V, 20 A receptacle testing is required, the SC2000 Test Cable can be ordered separately.



(SC2000 Test Cable shown)

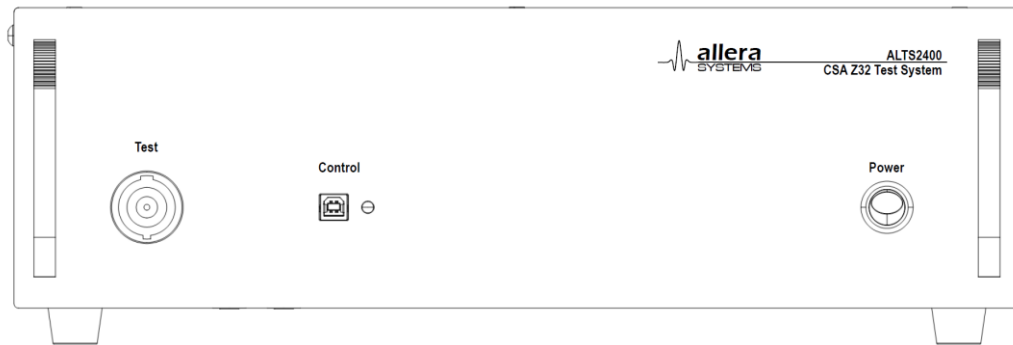


The SC1500 or SC2000 Test Cables provide secure connection to the ALTS2400 using a lockable circular connector. The receptacle under test connects via NEMA 5-15P or 5-20P hospital grade plug at the other end ensuring high reliability and matches the same connection performance required by medical equipment.

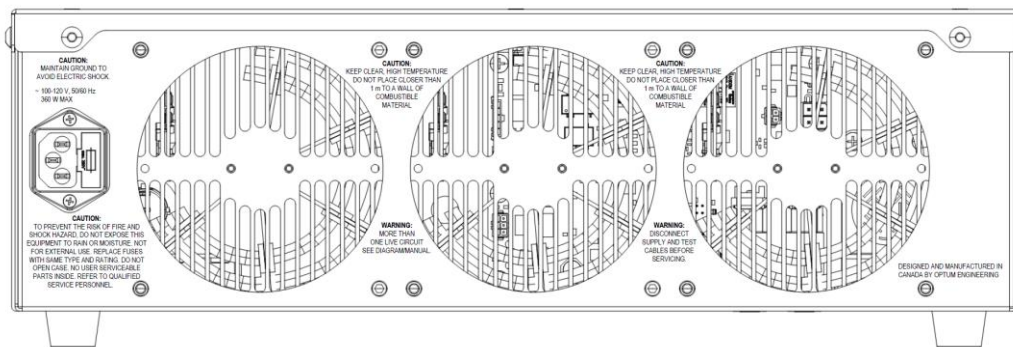
Once connected, the ALTS2400 reads information from the cable and is immediately ready for test.

Electrical/Mechanical Specifications

Product	CSA Z32 Test System (120 V, 15 A and 20 A Systems)
Model	ALTS2400
Dimensions	44.5 cm x 41.0 cm x 15.0 cm
Power	360 W (supply) 2,000 W (load)
Ratings	250 V (max) operational (CAT I)
Measurement Accuracy	$\pm 2\% \pm 20$ mV
Applications	CSA Z32 Applicable Tests (single-phase 120 V, 15 A and 20 A): <ul style="list-style-type: none"> • Polarity testing • Voltage drop test for grounded systems • Ground return path voltage rise for grounded systems
Contents	Product comes complete with: <ul style="list-style-type: none"> • ALTS2400 CSA Z32 Test System • 2 m USB 2.0 cable • SC1500 Test Cable (2 m NEMA 5-15 to ALTS2400 15 A) • 3 m NEMA 5-15 to IEC 320-C13 18 AWG 125 V, 10 A power supply cable • ALTS2400 Control Software • Calibration Certificate



ALTS2400 Front View



ALTS2400 Rear View

Usage

Operation instructions included with ALTS2400 unit. Software is compatible with USB 2.0 and Windows 7 (or greater) operating systems.

Usage guidelines and data analysis are detailed within the CSA Z32 Standard.

Servicing

Load fusing is accessible at the bottom of the unit. Supply fusing is accessible at rear of unit. All load elements are thermally and electrically protected. No user serviceable parts inside.



ALTS2400 CSA Z32 Test System Specification Sheet

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